Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
STATE OF MAINE	)	
	)	Call Signs: [indicate lead call sign] et al.
Request for Waiver of Narrowbanding	)	[attach list of others]
Deadline, Section 90.209(b)(5)	)	

To: Public Safety & Homeland Security Bureau

REQUEST FOR WAIVER

The State of Maine ("the State"), pursuant to Section 1.925 of the Commission's rules[1] and *Public Notice,* DA 11-1189 (released July 13, 2011), hereby requests that the Commission waive Section 90.209(b)(5) of its rules[2] to provide additional time for the State to comply with the requirement that it operate on channels with a bandwidth of 12.5 kHz or less beginning January 1, 2013 (the "Narrowbanding deadline").

The State of Maine is currently deploying a new digital, trunked VHF radio and digital microwave interconnect system to replace a multiplicity of aging analog radio, microwave and UHF interconnect systems that currently serve the State's public safety agencies and related services. The new system incorporates the current frequencies used by the State (which are the subject of this waiver request)[3] and additional channels being obtained from the Public Safety Pool, the Industrial Business Pool, Part 22, and through sharing with the Federal Government. The system is designed for and will operate entirely on channels with a bandwidth of 12.5 kHz or

[1] 47 C.F.R. §1.925.

[2] 47 C.F.R. §90.209(b)(5).

[3] Attachment A contains a list of calls signs for which a waiver is requested

less, in full compliance with the Commission's rules. However, for the reasons discussed below, the new narrowband radio system may not be fully deployed prior to January 1, 2013.

Background: The Legacy Systems

The State of Maine consists of 33,215 square miles of extremely diverse geography that includes 17 million acres of forest, 3,500 miles of coastline, 6,000 lakes and ponds, and the longest land border with Canada (611 miles) of any state other than Alaska.[4] Maine has a 2010 Census population of 1,328,361, and an average population density of less than 40 persons per square mile. However, since most of the population is concentrated in the Portland area and along the I-95 corridor, actual density throughout much of the state is smaller. Significant portions of Maine have fewer than 10 persons per square mile. All of these factors pose unique challenges for a state-wide public safety communications system.

In 1940, the Maine State Police put into operation its first two-way radio system – one of the first statewide systems in the nation – which has seen only small upgrades over the years. At the same time, other Maine State agencies and departments implemented their own mobile radio communications systems, for the most part independent of one another and designed to support each agency's separate requirements. The following agencies use one or more largely obsolete, wide-band, analog, VHF two-way mobile voice radio networks that are owned, operated, and licensed by the State:

- Department of Public Safety (State Police)
- Department of Conservation
- Department of Inland Fisheries and Wildlife (Warden Services)
- Department of Defense, Veterans and Emergency Management (MEMA)
- Department of Marine Resources
- Judicial Branch – Office of Court Security

[4] Approximately two-thirds of the State falls above Line A.

- Department of Corrections
- Bureau of General Services
- Department of Transportation[5]

Coverage available from these different systems is not uniform or complementary, resulting in significant overlap in some regions of the State at the expense of no coverage in other regions.

Today, the State of Maine is facing the unavoidable reality that its two-way mobile radio systems are outdated, difficult to maintain, and no longer adequate to serve their respective departments' critical needs. These two-way radio systems, with a total of more than 5,400 mobile and portable radios, are now four to five generations-obsolete, suffer from an increased number of outages, with certain critical spare parts available almost exclusively through online auctions. Virtually all of these radios also need to be replaced to meet the Commission's Narrowbanding requirement. The average age of system infrastructure on these networks is 26 years.

The attacks of 9/11 also highlighted that communication interoperability and coordination between federal, State, and local public safety agencies in Maine is problematic at best…impossible at worst. With few exceptions, communications interoperability between different agencies is both cumbersome and time-consuming to affect, if possible at all – particularly during significant emergencies requiring response by several different State and local agencies at one time.

Finally, the infrastructure and backbone of the State's networks are in poor condition. Radio towers and dispatch centers are interconnected by a variety of aging analog microwave and UHF links, spread-spectrum wireless radio, and leased T1 lines. These links are susceptible to outages due to equipment failure, line-of-sight problems with foliage and long distances,

[5] The Department of Transportation operates in VHF Low-Band.

uncertain quality of service-performance, and atmospheric conditions. The State-owned tower sites are in varying degrees of disrepair, and many do not provide adequate intrusion and weather protection measures.

The New State of Maine VHF Radio System

The State is now deploying a new state-wide radio system that will consolidate all of its current VHF Hi-band radio systems into a new narrowband-compliant VHF, Project 25-digital, trunked radio system. A System Design Report was completed in August 2006, which was followed by a design and construction Request for Proposal (RFP) in January 2007, for what became known as "MSCommNet" (Maine State Communications Network), a complete VHF land mobile radio replacement for the State's current systems.[6] Following two cycles of competitive bids, a design and construction contract was awarded to Harris Corporation in May 2009.[7]

The new radio system will include new mobile, vehicular repeater, and portable radios, new dispatch consoles, and will provide for improved radio coverage, voice quality/clarity, and capacity. The VHF frequency band was chosen for the new system to allow for interoperability across all levels of government, including local and Federal agencies. There will also be major improvements and upgrades to the network infrastructure, including a digital microwave system linking over 40 upgraded/updated radio and/or microwave tower sites, with improved security,

[6] The VHF band was chosen (a) for interoperability purposes, as nearly all current state public safety systems and all but one local public safety agency in Maine currently operate in VHF, and (b) because of the enormous cost of building and maintaining a system in 700 MHz or 800 MHz bands due to extraordinary number of sites that would need to be placed in remote locations to provide adequate coverage, especially in Maine's many heavily forested areas.

[7] The initial contract award to Harris (then known as Tyco Electronics M/A-COM) in January 2008 was invalidated in May 2008, following a challenge and hearing in April 2008. A new RFP was prepared and released in August 2008, with a final contract awarded to Harris in January 2009. Contract negotiations followed the award, with final contract execution occurring on June 11, 2009.

weather resistance, grounding, and back-up power to provide superior reliability. The State's new radio system is fully funded with $50 million appropriated by the State of Maine and $4 million in Federal grants (DOJ/COPS, NTIA/DHS/PSIC, and DHS/FEMA).

The original project timeline, with previously expected completion dates, is set forth below. Note that this schedule was developed with the prior assumption that all necessary frequency assignments could be obtained no later than December 31, 2011. As noted below, that assumption is no longer valid, and these dates will need to be adjusted.

Planning and Design	
Preliminary Planning and Design	Complete
Final System Design	Complete (other than final freq. plan)
Site Design and Acquisition	12/30/2011
Manufacturing & Staging	
Season 1	Complete
Season 2	5/30/12
Site Development & Installation	
Simulation Test System Site	Complete
Site Development (Season 1)	12/30/11
Site Development (Season 2)	9/30/12
System Optimization & Acceptance	
Simulation Test System	10/28/11
Final statewide	9/31/12
Mobile Radio Deployment	9/27/12
Portable Radio Deployment	8/29/12
Console Installation	8/17/12
System Cutover	12/31/12

The new system will make full use of the VHF Public Safety Pool, including channels already assigned to the State,[8] to the maximum extent permitted by frequency coordination policies, engineering practices, and FCC licensing rules. A substantial number of the State's applications for additional Public Safety Pool channels are still pending as of the date of this

[8] The State further notes that all of its current conventional VHF licenses have been modified to include narrowband operations. Importantly, much of the geography of Maine lies above "Line A" and is subject to Canadian border restrictions on frequency availability and use. More than 70% of the required frequency applications require Canadian approval.

waiver request. Due to a variety of factors, including the FCC's processing backlog, some of these applications are unlikely to be granted until early in 2012. In any event, even if all of those applications are granted, there are not sufficient Public Safety Pool channels available pursuant to frequency coordination and FCC licensing requirements to accommodate all of the channels needed for the new radio system.

The State and Harris Corporation have been working diligently for several years to address the frequency shortfall. Harris Corporation has purchased Part 22, VHF licenses for use in the State's system.[9] The State and Harris are also currently working with NTIA through a Memorandum of Understanding with the U.S. Department of the Interior to use cooperatively certain Federal Government VHF channels.

The State is has also applied for certain Part 90, Industrial Business (IB) Pool channels, including channels allotted for railroads and subject to frequency coordination by the Association of American Railroads (AAR). The State believes that these IB Pool channels can be assigned to the State without leading to interference to current IB licensees or significant reductions in channel availability for railroads. A waiver of the FCC's eligibility rules will be necessary before those channels can be assigned to the State.

The State initiated discussions with AAR in 2010 once it became clear that there were no other viable sources of VHF spectrum to fulfill the State's requirements. Initially, there had been suggestions that certain Short Line Railroads operating on State-owned track beds in Maine could provide the "vehicle" to obtain channels with AAR's approval. However, following extended discussions in both the U.S. and Canada, that option was ultimately rejected by AAR on June 28, 2011. The State then sought to have a face-to-face meeting with AAR officials to

[9] The FCC granted a waiver to use the Part 22 channels on a non-common carrier basis (FCC File No. 0004753988). Harris will be transferring the licenses to the State.

explore the State's spectrum requirements, which finally occurred on October 14, 2011. However, the State subsequently received a statement from AAR that it "would oppose any request to coordinate channels licensed to the railroads in the I/B band for public safety use."[10] The State proceeded to prepare applications and a formal request for waiver of the FCC's rules regarding the railroad channels. The applications were submitted through a Public Safety Pool coordinator to AAR, which reiterated its objection on November 18, 2011. On December 5, 2011, the State's applications and request for waiver were submitted to the FCC.[11]

The State had originally anticipated that the Public Safety Pool applications, NTIA frequency sharing, and Industrial Business Pool channel assignments, along with required waivers, could be approved prior to December 31, 2011. That would have allowed system deployment to be completed prior to January 1, 2013. Specifically, the State would have been able to begin agency-specific frequency planning and template development in January and have it completed by the end of March 2012. That in turn, would have allowed radio programming and installation to begin in May and be completed by the end of September 2012, with system cutover completed by December 31, 2012. However, final frequency assignments after December 31, 2011, will postpone all of those milestones and will not allow sufficient time to meet the Narrowbanding deadline.

Despite concerted efforts on behalf of the State of Maine and Harris, it no longer appears realistic that all of the frequency assignments noted above can be obtained before the end of 2011. Therefore, since the Commission has strongly urged that Narrowbanding waiver requests

[10] Electronic correspondence from Howard G. Moody (AAR consultant) to Robert Isby, Jr. (Harris Corp), Nov. 8, 2011, 12:05 PM.

[11] File Nos. 4980650-498067, 4980673, 4981067, and 4981069.

be filed prior to the end of 2011,[12] the State is submitting a request for waiver at this time. The State will withdraw or supplement this request for waiver as circumstances warrant. At the present time, the State is requesting an extension of 12 months, until December 31, 2013.

Grant of the requested waiver will not have a negative impact on other public safety licensees. The State is not aware of any licensee whose Narrowbanding schedule will be delayed as a result of the waiver requested herein. The State has also worked with local agencies to address their frequency needs when they arise, providing letters of concurrence and adjusting frequency planning when needed. Notably, most of the other public safety licensees in Maine operate relatively small radio systems without substantial requirements for additional spectrum. The only apparent exception is the City of Portland, which does not operate in the VHF band and is unaffected by Narrowbanding requirements.[13]

The State does not have a reasonable alternative. Even if the State's mobile/portable units are replaced with narrowband-capable equipment prior to January 1, 2013, a substantial number of the analog conventional base stations in the existing infrastructure cannot be cost-effectively converted to narrowband operation. The new digital, trunked base stations could not be deployed effectively until additional channels are assigned to the State as current channel assignments would not accommodate the new state-wide channel plan and would not provide sufficient capacity for trunked operation at most sites. Although the new digital trunked base stations are capable of being operated in analog conventional mode, the resulting problem of cutover from an analog narrowband system to the final digital trunked system using exactly the same hardware would be unduly burdensome and expensive to solve.

[12] *Public Notice*, DA 11-1189 (released July 13, 2011).

[13] The City of Portland is the sole public safety licensee in Maine operating in the 800 MHz band.

Section 1.925(b)(3) of the Commission's rules allows it to grant a waiver if it is shown that either: "(i) the underlying purpose of the rules(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest;" or "(ii) in view of unique or unusual factual circumstances of the instant case, application of the rules(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative."[14] The Commission's *Public Notice*, DA 11-1189 (released July 13, 2011), provides guidance for satisfying the requirements of Section 1.925 in the context of a waiver of the Narrowbanding deadline. For the reasons discussed herein, the State of Maine believes that a waiver is warranted pursuant to that guidance.

The Narrowbanding rule is intended to increase efficient use of scarce radio spectrum. The State is fully engaged in the process of deploying a spectrum-efficient, digital trunked radio system in part to comply with the Commission's rules. Therefore, a waiver would be consistent with the "underlying purpose" of the rule and would be in the public interest as it would promote improved public safety radio communications and spectrum efficiency as discussed above. The "unique" circumstances of this case, involving a nearly complete radio system replacement and the need to resolve difficult frequency acquisition issues, along with the lack of any reasonable alternative that would not be "unduly burdensome," further demonstrate the public interest benefits of a waiver.

[14] 47 C.F.R.§1.925(b)(3).

CONCLUSION

Therefore, for the reasons discussed above, the State of Maine hereby requests a waiver of the Commission's Narrowbanding deadline.

Respectfully submitted,

STATE OF MAINE

/s/

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